

Title (en)
METHOD OF JOINING MEMBERS TOGETHER

Title (de)
VERFAHREN ZUR VERBINDUNG VON ELEMENTEN

Title (fr)
PROCEDE POUR REUNIR DES ELEMENTS

Publication
EP 2006038 A9 20090225 (EN)

Application
EP 07741488 A 20070412

Priority
• JP 2007058052 W 20070412
• JP 2006111087 A 20060413

Abstract (en)
[origin: EP2006038A2] A joining method for joining a second member to a first which is a tubular member having a plurality of hollow portions partitioned by a partition wall portion is provided. The first member 1 is inserted into an insertion hole 6 formed in the second member 5. A die segment 11a of a die 11 and a wedge portion segment 19a of a mandrel 18 are disposed in each hollow portion 3 of the first member 1. Next, in a state in which the partition wall portion 4 is held by and between both wedge portion segments 19a and 19a, each wedge portion segment 18a is inserted into the corresponding wedge hole portion segment 14a of the die segment 11a to thereby move each die segment 11 of the die 11 radially outward of the first member 1. With this, the inserted portion 2a of the first member 1 inserted in the insertion hole 6 and both portions 2b and 2b axially adjacent to the inserted portion are expanded to thereby join the first member 1 and the second member 5.

IPC 8 full level
B21D 39/06 (2006.01); **B21D 39/20** (2006.01)

CPC (source: EP US)
B21D 39/06 (2013.01 - EP US); **B21D 39/20** (2013.01 - EP US); **F16B 17/006** (2013.01 - EP US); **Y10T 29/4994** (2015.01 - EP US); **Y10T 29/53996** (2015.01 - EP US)

Cited by
FR3020289A1; US2014230213A1; US9517536B2; EP3738689A4; DE112017006800B4; US11433450B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
EP 2006038 A2 20081224; **EP 2006038 A4 20100505**; **EP 2006038 A9 20090225**; **EP 2006038 B1 20110615**; AT E512736 T1 20110715; CN 101421060 A 20090429; CN 101421060 B 20110921; JP 2007283323 A 20071101; JP 4843356 B2 20111221; US 2009277523 A1 20091112; US 8266782 B2 20120918; WO 2007119777 A1 20071025

DOCDB simple family (application)
EP 07741488 A 20070412; AT 07741488 T 20070412; CN 200780013389 A 20070412; JP 2006111087 A 20060413; JP 2007058052 W 20070412; US 29715407 A 20070412